Increasing production levels while reducing maintenance costs through reliability

Business challenge
A large international pharmaceutical manufacturer was in the final stages of a North American plant expansion that would double plant production and, as a result, create additional maintenance needs. Due to a large maintenance work backlog, relatively old equipment and high turnover for contracted employees, the manufacturer needed to identify the optimal mix of in-house maintenance employees versus contractors, and improve current maintenance and reliability processes.

Solution
ABB Reliability Consulting was chosen to help achieve and sustain the manufacturer's production goals. After performing ABB's World-Class Reliability® Benchmark, an assessment comparing reliability and maintenance work practices against world-class standards, ABB discovered three key improvement areas.

1. Develop the maintenance organizational structure and work processes
To leverage plant improvement opportunities ABB first developed a cross-functional leadership team, led by a senior functional manager and composed of ABB subject matter experts and managers from maintenance, engineering, manufacturing and finance. The team met weekly over the first seven months to guide and provide support for changes, which was crucial for developing and reinforcing a new maintenance organizational structure and supportive work practices. A formal planning and scheduling group was created and job descriptions, including specific roles and responsibilities, were prepared for new positions. Work Management Process training was provided to employees to ensure sustainability.

ABB's solution helped instill a disciplined process for effectively executing scheduled work.

2. Execute new planning and scheduling processes
Implementing ABB's solution involved executing a simulated maintenance scheduling meeting with a draft weekly schedule, which was piloted in one manufacturing area. Following the simulation, the first weekly schedule for the manufacturing department was issued and reviewed by representatives of all manufacturing sections. Improvements were made, and the final schedule was issued according to the process. The following week all craftsmen worked from the enhanced schedule.

3. Increase focus on core
Contract maintenance workers were converted to employees to perform core tasks while remaining contractors performed non-core activities. This strategy helped decrease turnover among core personnel by assuring longer-term job security. It also aligned the most highly-skilled workers with the most important work activities.

Results
By improving the maintenance organizational structure and reducing backlog and emergency work, the manufacturer avoided hiring additional maintenance personnel for the new assets in the major expansion. This resulted in more than $850,000 in annual recurring savings. In addition to avoiding these employee costs, other benefits accrued. Less than two months after the planning and scheduling process started,
the plant’s scheduler and craftspeople worked down the maintenance backlog to three weeks. This metric indicated better worker utilization and allowed management to consider downsizing through attrition or reassigning personnel to higher value activities. Management eventually decided to allocate existing maintenance resources to perform more preventive and predictive maintenance, which further reduced unplanned asset breakdowns and increased plant productivity.

Prior to working with ABB, the manufacturer was in a reactive mode with the majority of work being performed on an emergency or urgent basis. After implementation of new management work processes, emergency and urgent work decreased by more than 50% and significantly reduced labor requirements associated with the repairs.